

VITAL QUESTIONS AND ANSWERS

CONCERNING
DEFENSE

15,000,000
CHILDREN

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VITAL QUESTIONS AND ANSWERS
CONCERNING
15,000,000 PHYSICALLY
DEFECTIVE CHILDREN

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ASSOCIATED ADVERTISING CLUBS
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IS YOUR CHILD ONE OF 15,000,000 PHYSICALLY DEFECTIVE CHILDREN IN THE UNITED STATES?

250,000 children die each year.

5,000,000 children are anaemic or tuberculous.

6,000,000 children have adenoids or enlarged tonsils.

10,000,000 children have bad teeth.

At this rate the nation will become bankrupt physically in one or two generations.

If you wish to join hands in this fight for pure food and healthy children, send for post cards for distribution or mailing.

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WHAT AM I?

I am a being composed of body and soul.

WHAT IS MY BODY?

My body is the instrument through which my soul expresses itself. It is formed of external members and internal organs, all of which work in order and agreement with each other under the command of an unseen general when I am in that state or condition of life called health.

WHO OR WHAT IS THAT UNSEEN GENERAL?

That unseen general is the wonderful law of nature which always operates for my good in a fixed manner, unless interfered with by something from the outside which accident, ignorance or ill-will puts in its way.

WHAT IS THAT STATE OR CONDITION OF LIFE CALLED HEALTH?

Health is the product of the life that is in me. Ash is the end-product of combustion or fire. It is the thing that we deal with after the processes of burning have been completed. It is the end of the fire and the last product of the fire, and so we call it an end-product. In the same manner my life-processes produce an end-product. When all my organs, spleen, heart, liver, lungs, stomach, kidney, skin, etc., are working in harmony with each other and each is doing its exact duty in obedience to the commands of that unseen general, the product of my life procession is health.

WHAT HAPPENS WHEN ONE OF MY
ORGANS BECOMES LAZY OR CRIP-
PLED, OR IS INTERFERED WITH BY
OVER-WORK OR EXCESS OR ABUSE
OR BAD NOURISHMENT OR STARVA-
TION?

Another kind of end-product is produced under such conditions. We can name it disease or disorder. It is a bad end-product, and nature abhors it and wants it changed so that the good end-product which we call health may take its place.
HOW DO WE KNOW THAT NATURE AB-
HORS IT?

Because nature serves warning upon us in the form of a sign that we may know that something is wrong and thus use the intelligence which God has given us to remove or change the bad conditions that cause the disorder.

WHAT ARE SOME OF THOSE SIGNS BY
WHICH NATURE TELLS US THAT
SOMETHING IS WRONG?

Pain, loss of feeling or sensation, unnatural sleep, or sleep that comes over us when we should be awake and at our work or our play; loss of appetite or disgust at the sight of food, loss of strength, the "blues" or depressed spirits, loss of courage, uneasiness. In short, anything that makes us feel out of sorts is a sign that one or more of our organs is not doing its proper share in keeping us well.

HOW DO WE KNOW THAT THIS UNSEEN
GENERAL, OR FIXED LAW OF NATURE,
ALWAYS OPERATES IN THE SAME
WAY?

Because no matter where we go, whether it be to China or Greenland, to the United States or to the smallest island of the most distant ocean, we find that man's body is always composed of the same elements and these same elements are always built up or organized in the same way, and any interference with the number or nature of these elements always results in disease.

HOW MANY OF THESE FIXED ELEMENTS ARE FOUND IN MAN'S BODY?

About sixteen.

WHAT ARE THEY?

Hydrogen,
Nitrogen,
Oxygen,
Carbon,
Iron,
Calcium,
Phosphorus,
Sodium,
Potassium,
Magnesium,
Silica,
Sulphur,
Manganese,
Chlorine,
Fluorine,
Iodine.

WHERE DO THESE ELEMENTS COME FROM?

From the earth.

IS THEN THE PHRASE, "DUST THOU ART
AND UNTO DUST THOU SHALT RE-
TURN" QUITE TRUE?

Wonderfully true!

BUT HOW IS IT THAT THESE SIXTEEN
ELEMENTS CAN POSSIBLY FORM THE
BODY OF A MAN?

Because these elements are organized and compounded by the Creator in the most mysterious but orderly manner, and they unite with each other to form the combination of bones, tissues, and blood which we know as the human body.

WHAT DO YOU MEAN BY ORGANIZING OR
COMPOUNDING THESE SIXTEEN ELE-
MENTS?

To make this clear, let us take something which we can grasp and from it gather an idea of God's operations in planning and constructing the human body. Suppose we take the twenty-six letters of the alphabet, and call them elements like the sixteen elements of which we are composed, iron, phosphorus, calcium, potassium, etc.

A Shakespeare with his wonderful ability to imagine, and his wonderful knowledge of men, takes words made up of those twenty-six simple elements, or letters of the alphabet, compounds or organizes them into phrases. He then groups or organizes them into sentences; the sentences into paragraphs. The paragraphs are further organized into scenes, the scenes into acts. We marvel at his genius and power in combining and balancing the parts, or organizing them into the body of singular beauty and meaning called the play of Hamlet. Of the

twenty-six letters employed by Shakespeare in organizing his play, five of them are used oftener than the others, and at least one of the five is found in every word. These are the vowels a-e-i-o-u. In somewhat similar manner the Creator has used four of the sixteen elements of which the human body is organized more often than the others. These four elements are found in the air and water and are called oxygen, hydrogen, nitrogen and carbon. Like the vowels in words these four elements are found distributed through all parts of the human body. As the vowels are grouped with some of the other letters of the alphabet to form words, so these four elements have to be organized with the other twelve elements in order that we may have a perfect human body, or what is called an organic compound.

WHAT ARE THOSE OTHER TWELVE ELEMENTS CALLED?

The minerals of the body.

ARE THE MINERALS THEN IMPORTANT?

If we remove any one of them from the body, or if we interfere with the power of the body to find any one of them, or if we change the nature of any one of them by treating it with some foreign element (poison) the body sickens and dies!

WHERE THEN DOES THE BODY FIND THESE TWELVE MINERAL ELEMENTS?

Only in food.

IS FOOD THEN A MORE IMPORTANT THING THAN IT IS USUALLY CONSIDERED?

Food is so important that it may be called the foundation of all human happiness. Food of the

proper kind underlies all art, all science, all literature, all progress. In proportion as man through gluttony, wilful ignorance or stupid indifference, ignores the natural (one might almost say the divine) relationship existing between proper food and normal life, he lessens or destroys the faculties of body and mind through which the soul expresses its aspirations and desires. Man's body, through improper habits of eating and drinking, can become so disorganized and so out of tune with the natural law that from its disorderly operations every crime, including murder, may spring. Witness the criminal acts of the drunkard!

IS IT THEN POSSIBLE THAT NATURE SO ABHORS ANY TRIFLING WITH HER BENEFICENT LAWS THAT SHE DELIBERATELY PUNISHES AND SERVES WARNING ON EVERY OFFENSE IN THE FORM OF PAIN?

Undoubtedly this is just what nature does. If we introduce discord into the divine harmonies of the human body, we destroy or impair its functions, outraging the work of the Creator who made that wonderful body. We have to deal with evil in the shape of sickness and pain, when by our own acts of omission or commission we abuse the marvelous machine of the human body by subjecting it to conditions contrary to the laws of nature, which are the laws of God.

Sickness and pain are not evils as people think, but insistent voices of warning crying to us to heed our ways. Pain is the conscience of the body, and sickness is the balance indicator whereby we may

determine how much short we come of reaching the standard of health.

DOES ALL FOOD CONTAIN THE SIXTEEN ELEMENTS REQUIRED BY THE BODY?

No!

WHY IS THIS SO?

Chiefly because from unnatural demands for so-called refinement in the appearance or flavor of food, man changes the nature of many of those compounds or removes the elements partly or entirely from the food which nature gives him.

THEN EVERYTHING THAT MAN EATS IS NOT FOOD?

Food is not what man eats but what he digests. Food is those combinations of mineral salts with hydrogen, nitrogen, oxygen and carbon, which give to man in assimilable form the elements which form his white and red blood corpuscles, his body-juices, (saliva, gastric and pancreatic solvents, bile, lymph, serum, enzymes, ferments, etc.), his bones, tissues, muscles, etc., and which keep these constantly changing substances in daily repair, and supply heat and energy.

Food of the proper kind containing these mineral salts enables him to elaborate anti-bodies and to resist the invasion of disease.

It also carries on the life processes by which he lives; the processes of assimilation, and of equal importance, the processes of elimination. Through the latter he discards the poisonous end-products of the living fires that burn within him. Constant chemical changes are carried on by the action of the

mineral salts. Without the vitalizing influence of these he dies.

HAS SCIENCE DESCRIBED FOOD CORRECTLY?

Science has divided food into "carbohydrates," "proteins" and "fat," dismissing as unimportant the division called "ash" under which all the mineral salts are found. This mistake has allowed to grow up unchallenged many commercial practices, whereby in an attempt to gain some advantage over a competitor, natural foods have been denatured, impoverished, debased, demineralized, "refined." NAME A FEW SUCH PRACTICES.

The "refining" of the juice of the sugar cane, whereby its invaluable tissue salts or mineral salts are removed.

The "pearling" of barley, which results in the removal of three-fourths of its vitalizing minerals, to improve its appearance.

The "polishing" of rice, for the same reason and with the same results.

The degerminating and debasing of corn in the manufacture of corn meal, corn starch and glucose with the same resultant loss of the most indispensable qualities.

The treatment of oats, whereby through steaming and bleaching a great part of the soluble salts is lost or changed.

The milling of white flour, which for the great American bread eaters, the children of the poor, is the sign and symbol of decay and death. In the screening and bolting process, whereby the bran, shorts, tailings, coarse middlings, fine middlings, and

clear flour are removed, the wheat-berry in which nature has gathered up for man all of the sixteen food elements required by him particularly during the formative or growing period of his life, is robbed of eight of these food elements. Then man foolishly thinks that his body with the remaining eight can do the same work as if it were supplied with the sixteen. The child fed on white bread is first of all constipated, and then he suffers the loss of the iron and manganese necessary for his blood, the potassium for his tissues, the calcium and phosphorus for his bones and teeth, and he also loses the combination of these elements with the organic chlorine, silica and sodium which enter into the formation of many of the acid and alkaline body-juices.

Defective teeth and vision, lusterless eyes, pale cheeks, bloodless lips, underdeveloped limbs, low resistance to disease, physiological discord follow in the wake of a white flour, or white bread, cake, pie, cracker and syrup diet.

BUT WHEN WE EAT THE BRAN OR SILICIOUS MATTER OF THE WHEAT-BERRY DO WE NOT EAT WHAT, AS HAS BEEN SAID BY THE FLOUR-MILLERS, IS PRACTICALLY GROUND GLASS?

We no more eat ground glass in eating the bran or silica of the wheat-berry than we eat horseshoes in eating its iron, or match-heads in eating its phosphorus, or white-wash in eating its calcium, or foot-powder in eating its magnesium, or volcanic fires in eating its sulphur, or the enamel of teeth and the whites of eye-balls in eating its fluorine.

BUT WHY SHOULD WE EAT THE BRAN?

First, because when ground with the whole wheat meal, it assists digestion by surrendering to the body the precious mineral solubles which it contains, and second, because it affords a natural, gentle and unfailing stimulation to the peristaltic action of the bowels, thereby promoting and assisting perfect elimination without which many grave disorders are set up to curse the children of men and particularly the mothers of the children of men. It is not the bran itself which stimulates this action but the mineral substances contained in the bran. If these mineral substances are extracted from the bran, it will not excite peristaltic action.

WHAT IS THE PERISTALTIC ACTION OF THE BOWELS?

The peristaltic action of the bowels is a rhythmical wave-like contraction and expansion of the muscle-layers of the intestines which gently but progressively carry the food in its various stages of digestion along its course through the body. As the food is carried from one zone to another it undergoes remarkable changes as the result of the action of the acid and alkaline digestives of the body, and the decomposing, or splitting-up, action of the various ferments and enzymes which attack it and break-up its complex structure into simpler forms which can be seized by the exceedingly delicate machinery of assimilation. In this changed state it is appropriated by the body and thus entering the blood stream is carried along to do its wonderful work of keeping the body alive and well.

IS THIS PROCESS IMPORTANT?

Through faulty food, too concentrated in form or lacking in necessary bulk or fibre, or robbed of the basic elements from which the chemical juices of the body are formed, this peristaltic action becomes sluggish or enfeebled, and constipation and congestion follow. This congestion passes over into other organs, in the case of women to the ovaries. On a diet consisting largely of white bread the race unborn is handicapped and enfeebled before coming into the world.

WHAT CAUSES WRINKLES OR PREMATURE AGE?

By this congestion the ability of the body to seize upon the food elements which it needs, is impaired and the poisonous end-products of intestinal decomposition are absorbed into the blood-stream instead of being eliminated, and thus the skin, kidneys and lungs are taxed beyond their natural functions in a violent effort of nature to purify and keep normal the blood stream. In imposing these unnatural burdens upon the skin we transform its millions of pores into a vast sewer system, thereby destroying its elasticity and vigor and robbing it of its freshness and brightness of appearance. In this manner the bloom of youth is lost and the skin, old before its time, sags, wrinkles and hardens into the first sign-post of age. Cosmetics applied from the outside will never act as a substitute for normal functioning within. Beauty is skin deep and no deeper, but the health which underlies that skin-depth is as deep as the center-most organ of the body.

WHAT IS THE CAUSE OF MANY SURGICAL OPERATIONS?

This derangement of function caused by improper food gradually but surely spreads to the other organs and where nature's margin of safety has been overlapped by unnatural activities there is rebellion in the form of some acute disease. Unless the unnatural cause at this stage is corrected, chronic disease follows and the body is burdened to a degree that sometimes makes living intolerable. Food-follies have been indirectly responsible for more suicides than all other evils combined and is the cause of 75 per cent of surgical operations.

WHAT ARE SOME OF THE THINGS THAT KEEP PHYSICIANS BUSY?

Cocktails,
Gin-fizzes,
Gin-rickies,
Whiskey,
Brandy,
Sulphur-bleached wines,
Alum-hardened pickles,
Sulphur-bleached molasses,
Sulphur-bleached apricots, peaches, pears, apples,
Copper-colored peas, spinach, stringless beans,
Canned pumpkin, asparagus, cranberries and all
other canned foods containing the irritant salts of
tin.

Fried eggs and liver,
Maraschino cherries,
Lard-logged pastry,

Chemically preserved condiments, catsup, jams, soft drinks, mince meats,

Artificially colored foods of every kind and the hundred "foodless-foods" which commercial ingenuity has attractively prepared behind fancy labels.

IS WHITE FLOUR BREAD MORE DIGESTIBLE THAN WHOLE-WHEAT BREAD?

White bread undoubtedly digests in less time than whole-wheat bread, but water requires less time for absorption than white bread and on such lines of reasoning water should be preferable to bread of any kind. It can be set down as a fixed law of nature that the time required in the digestion of any natural food is not a factor to be reckoned with. Not time but thoroughness and efficiency must be the standard of measurement.

The whole wheat gives to the body the elements demanded by the body. It has more to give and it gives in accordance with nature's law. That nature requires more time in the process is as it should be.

White flour does not give what has been taken from it. White bread and water will not sustain life. Whole wheat bread and water will sustain life. Time is an idle objection when by granting the objection and acting upon it we put an end to time as far as the body is concerned.

IF IT IS LAUDABLE TO DENATURE OUR BREAD IN THE BREAD STAGE OF OUR DIET, SHOULD IT NOT ALSO BE LAUDABLE TO DENATURE OUR MILK IN THE MILK STAGE OF OUR DIET?

The mother's milk contains the sixteen elements needed by the growing babe, and the thought of

changing the nature of that food by removing one or eight of its natural elements before permitting the babe to consume it is revolting. If mother's food is normal the babe will receive normal milk. If her food is lacking in any of the elements demanded by the milk, her own body is consumed in nature's effort to produce a perfect milk for the growing infant. This consumption of bone, blood and tissue continues to the point where the mother, like the wrongly fed cow, becomes afflicted with tuberculosis. Her tissues have been so robbed of their vitalizing and protecting elements that they lose resistance and become a fertile field for the development of the tubercle bacilli.

Cows fed on brewer's grain (demineralized and denatured) and the artificial commercial foods with which the dairyman has sought to produce cheap milk, succumb in large numbers to tuberculosis. Cows fed on natural or undenatured food, under the auspices of county medical societies for the production of "certified-milk," remain, like the naturally fed horse, immune to tuberculosis.

WHAT IS THE EXACT QUANTITY IN
TERMS OF GRAMS OF PHOSPHORUS,
IRON, CALCIUM, POTASSIUM, SILICA,
CHLORINE, SODIUM, SULPHUR, ETC.,
WHICH WE SHOULD CONSUME EVERY
DAY?

No chemist can ever tell us that. Nature has cunningly and skillfully arranged the schedule. Each natural food contains the right proportions of those chemical elements necessary to see it safely on its journey through the body. In other words,

any given natural food contains the elements of nutrition and in the exact proportion which it should contribute to the processes engaged in its digestion and assimilation.

DOES IT FOLLOW THEN THAT THE SIXTEEN ELEMENTS FOUND IN THE HUMAN BODY AND IN ALL EDIBLE VEGETABLES MUST APPEAR IN ALL SOIL CAPABLE OF SUPPORTING VEGETABLE LIFE?

A perfectly balanced soil must contain, chiefly, twelve mineral elements. The other four elements are obtained from the air and the rain. Where no effort is made to restore the elements which have been appropriated by plant life and thus removed from the soil, stunted growth or crop failure follows until man puts back into the soil the elements he has taken from it. In order that we may have a new supply of phosphorus with which to replace our annual drain upon the soil of this one element, the government prohibits the exportation of our limited supply of phosphate rock. The absence of phosphorus, like the absence of calcium, iron, potassium or any of the other mineral elements, means soil starvation—soil sickness. One little part of phosphorus in a thousand parts of earth is all that is necessary, but that one little part must be present or the mysterious compounder of life will not perform its duty. This is true of the other elements, each of which contributes in a special manner to the subtle elaboration of life.

BUT IF MEN UNDERSTAND THE IMPORTANCE OF ALL THESE ELEMENTS IN

THE FOOD OF PLANTS WHY IS IT THAT THEY DO NOT RECOGNIZE THE IMPORTANCE OF THE SAME ELEMENTS IN THE FOOD OF ANIMALS?

In a limited manner they do see the analogy and act upon it, as in the production of certified-milk cows, prize cattle, prize horses, prize hogs and prize poultry. The ordinary dairy cow, for instance, receives in her food between 15 and 30 lbs. of brewer's grain, from which much of the mineral content has been leached out in the brewing process, whereas the cow fed for vitality and sound milk receives no brewer's grain, but, on the contrary, is put on a diet of whole grains, corn and oats containing the elements which nature put there.

The ordinary cow also receives on an average two quarts of bran, whereas the specially fed cow is given as much as eight quarts of bran. The brewer's grain contains all the protein, fats and carbohydrates that nature put there and which dietetics make so much fuss over. In this sense it differs in no manner from whole, natural grain. The difference is simply a matter of mineral loss and the owner of the prize cow recognizes this difference and provides against it.

WHY THEN DOES MAN NOT ADD THESE MINERAL SALTS TO HIS OWN DIET IN THE FORM OF SPECIALLY PREPARED "TABLETS" OR "DROPS" TO TAKE THE PLACE OF THE MISSING ELEMENTS?

Man does try to do that. You have heard of the beef-iron-and-wine tonic, the phosphate tonic, the lime-water remedy, the hydrochloric acid and pep-

sin prescription, etc. The physician, in treating anemia, loss of vigor, nervous prostration, etc., makes an effort to put back into the starved bodies of men and women the elements of which they have been systematically robbing themselves by eating refined foods. His confessed failure is not his fault. He has the correct theory but nature does not assist him because that is not nature's way.

WHY IS THAT NOT NATURE'S WAY?

As the body's tissues are destroyed by the daily wear and tear, they are transformed into simpler chemical compounds and are passed out of the body as waste-products or useless end-products. In order that the living body may replace its broken-down cells it must have a constantly renewed supply of the elements from which those cells and their contents are evolved.

These elements as we find them in the soil or in raw rock can be called inert or non-living matter. The chemical processes which transform non-living matter into living tissues are the same in plants and animals with one exception.

Plants have the mysterious power of taking the non-living matter from the earth and compounding it into the wonderfully complex substances which form their structure.

Animals do not possess this power.

Hence the pharmacist or physician or chemist who attempts to replace nature's subtle and marvelously compounded organic mineral salts with laboratory preparations is handicapped from the beginning because nature does not recognize his feeble and imperfect technique and refuses to change

or suspend her inexorable laws to suit his purposes.

Animals are dependent for their existence upon foodstuffs prepared from the non-living matter of earth by the plants that have the power to prepare them.

Plants obtain the energy which enables them to do this mysterious work from the sunlight, and only in the presence of sunlight can they carry on the up-building, organizing processes which give them their tissues. Green grass will not grow in the dark.

The ability to bring about this translation of non-living matter into living cells depends on the presence of a chemical substance found in the green parts, which is called chlorophyl. Of the processes by which chlorophyl operates we know nothing other than the fact that the friendly rays of the sun are necessary to its activity. As nature provides man with no capacity to make use of the non-living elements of the soil he cannot, like the plant, go for his meals to a bed of earth or a stone-pile. The plant does that for him and he makes use of the plant. This fact explains the folly of attempting to feed mankind artificially on "tablets" or "meals in miniature," for even though such food might contain the elements required by the body in order to sustain life, they are not present in a form acceptable to the laws of nature and nature spurns them.

**WHAT DO WE MEAN BY THE TERMS
ENZYMES AND FERMENTS?**

Various parts of the plant and various organs of the body contain peculiar substances called enzymes and ferments, such as pepsin, trypsin, ptyalin, etc.

When not destroyed by intense heat or chemical preservatives they assist to transform the various foods furnished to the animal by the plant into the substances that can be absorbed and built up into living animal cells or tissues.

Ordinary baker's yeast is a ferment having the power to split-up or transform starch and sugar into alcohol, evolving at the same time a waste-product, or end-product, in the form of carbonic gas. It is the action of this gas which leavens or raises dough in the making of bread. Now, if we kill this ferment by treating it with an antiseptic or a chemical preservative such as borax, formaldehyde, benzoate of soda, etc., it cannot do its work. The ferments in the body are destroyed in the same way by the "harmless" preservatives used in the preparation of many commercial foodstuffs. This destruction of nature's ferments is a pernicious practice, the results of which cannot be measured by lawyers in the employ of food factories. Such food is dead food.

It was thought at one time that the ferments found in the digestive glands were the only ferments to be found in the animal body. In recent years it has been discovered that these ferments are of many kinds and are intimately concerned in all the manifestations of life. In the liver-cell as many as twelve ferments have been found, each performing its own peculiar function in the subtle processes of metabolism. It has also been shown that in the maintenance of life in the higher plants, the organized ferments are of profound importance. Through their action the higher plants obtain their nitrogen from the air in a form which they can utilize and

subsequently surrender to man for his needs. So, even in the presence of all the necessary minerals or mineral salts, if these ferments be absent, or enfeebled, vegetable or animal life cannot exist normally.

In the animal body some of these ferments, such as pepsin, can act to advantage only under an acid condition, hence nature takes certain of the mineral salts from the foods as a base for the elaboration of the acid secretions of the stomach. Other ferments act only in an alkaline medium and nature utilizes other combinations of the mineral salts in her production of the alkaline saliva, pancreatic juices, etc.

Fat-splitting ferments act only on fats; diastase ferments act only upon starch and sugar; proteolytic ferments act only upon albumens.

WHAT DO WE KNOW OF THE CHEMICAL COMPOSITION OF THESE FERMENTS?

Little that is definite. We do know that food of the wrong kind, food badly prepared, food which has suffered a loss of some of its elements by refining processes, can set up conditions hostile to the action of these ferments and thus invites the invasion of disease.

WHAT DO WE KNOW THAT IS DEFINITE ABOUT THE FORMATION OF SOME OF NATURE'S DIGESTIVE SOLVENTS?

We know that the body takes from food sodium chloride, potassium chloride, phosphate of magnesium and calcium in generating the alkaline pancreatic juice and that therefore the pancreas must find a constant fountain of these supplies. This it cannot do if they are interfered with in the

preparation of the food, for how can the body take from food elements which have been removed from it?

We know that the body takes from food sodium chloride, calcium chloride, potassium chloride, magnesium phosphate and iron in generating the hydrochloric acid juices of the stomach. By preventing the body from finding these elements we establish discord. The intricacies of the human laboratory excite admiration and amazement. The study of these conditions in the schools will inevitably be followed by tremendous advances in the welfare of the human race. One generation of men, born and reared with a knowledge of the laws of nature, will produce in the whole race physical and mental vigor of a type now produced only under the forces of happy accident, when by sheer good-luck this or that individual ignorantly observes many of the laws which make for good in his growth, development and normal sustenance. This is why the country-reared boy and girl, fed on the simple, natural products of the field and orchard are so often superior to the city-bred child whose life-processes are only too often enfeebled by a diet more or less artificial in character.

IS THE CITY CHILD THEREFORE CON-
DEMNED TO INFIRMITIES WHICH THE
COUNTRY CHILD IS LIKELY TO ES-
CAPE?

When the city child's food habits are simple and natural, and his exercise is what it ought to be, and his supply of fresh air is normal, he will enjoy the advantages of a larger and fuller life, even though

the influences of the farm and hillside are never to be under-estimated in their beneficial effect upon the character of men.

IS THERE ANY EVERY-DAY PHENOMENON WHICH WE MAY OBSERVE AND FROM WHICH WE MAY OBTAIN SOME STRIKING VIEW OF NATURE'S PROFOUND OPERATIONS?

Let us look at the nail of our little finger. Notice how delicately pink it is. Now pinch it between two of the other fingers. The pale pink color is at once intensified to a deep red. The change is instantaneous, but what does it signify? The pale pink hue indicates the general diffusion of the blood with countless millions of red corpuscles through the flesh under the nail. The pressure gives us a redder hue, for we have crowded these little red corpuscles into a cramped area, and the increase in their number makes them more noticeable.

Now if we strike the nail a bruising blow or cut through it into the flesh beneath, nature is aroused and all her energies are summoned to the injured spot to begin the wonderful labor of reconstruction.

The little red and white corpuscles of the blood stream, obedient to the orders of an unseen general, leap to their work of repair.

WHAT HAPPENS?

Every corpuscle goes like a soldier in the army with full instructions, doing its particular work with unerring precision.

The white corpuscles gather around the edges of the wound and pounce upon and destroy any invading bacteria or germ life that may be on the skin

near the wound. They are the policemen or protectors and stand on guard while their more numerous brothers, the red corpuscles, engage in the work of building new tissue, bridging the rent in the flesh and repairing the injury. The Creator endowed the corpuscles with apparent intelligence, for in obedience to some great unknown law these little soldiers of life go forth with full instructions as to their duty. Each one travels its beaten path without interfering with the work of its neighbor and accomplishes its purpose unless interfered with by an enemy from the outside, or unless they have been reduced in number and vitality by food of imperfect quality. Remember these corpuscles are the products of digestion and they come from the food we eat.

WHY DO INTELLECTUAL MEN HOLD COOKERY IN SUCH CONTEMPT THAT THEY IGNORE IT ALTOGETHER?

Because they have not learned to properly reverence the human body nor its majestic laws by a study of its functions in disease and health. Once we grasp the tragic significance of man's carelessness when he trifles with his foods, or when through false pride he commits the whole subject of nutrition to the haphazard control of the kitchen-drudge or to the commercial food factory, we will realize the responsibility that rests upon them to whom is entrusted the stupendous task of keeping the race alive and well.

BUT ARE WE NOT SO WONDERFULLY MADE THAT IT IS NEEDLESS TO GIVE MUCH CONSIDERATION TO OUR

HABITS OF EATING AND DRINKING, RELYING INSTEAD UPON OUR NAT- URAL RESISTANCE TO DISEASE?

We must remember that any violation of nature's laws, whether they be broken in presumption, in ignorance or in wilfulness, results in disease and death. In the United States during the year 1910, two hundred and thirty-five thousand two hundred and sixty-two children under ten years of age died from preventable causes because in some manner those laws were violated. The ignorance of their parents and the evil practices of modern civilization brought about these untimely deaths. We cannot presume upon our strength nor laugh in the face of nature's laws without paying the price.

WHY CAN WE NOT TRIFLE WITH THESE LAWS NOR IGNORE THEM?

If we look upon the universe as a self-made, self-existing system of things, and man as the most highly developed member of it, we can then look upon him as self-controlled, responsible only to self, limited indeed in power by external forces, but otherwise absolute master of his own actions. Viewed in this light there is no reason why he should not exercise complete liberty, if there is no being who can claim the right of commanding his obedience to any laws.

But as we recognize that behind the wonderful play of Hamlet there must have been a more wonderful intelligence capable of conceiving and executing that wonderful structure, we can easily believe that behind the sublime universe of which man is

but an integer, is an intelligence of infinite order, God, the Creator.

He it is, who after founding the material universe and furnishing it with life, has imposed upon that life the laws by which it is sustained and by the violation of which it is destroyed.

Man is therefore responsible to his Maker for the use which he makes of his faculties and his liberty. God has placed man under the reign, not only of moral law but of physical law as well. The instincts of self-preservation and self-development are not merely instincts. They are divinely appointed impulses keeping man to the main course that leads to the ends for which he was created. The physical law and the moral law are so interwoven with each other that they are not to be separated.

Once man recognizes that his life and its capabilities are the gift of God bestowed upon him for the working out of his destiny, it follows that he is not himself to bring his career to a premature close.

Man may not hasten his end by the swift bullet nor by the slower but equally certain method of small daily doses of poison, nor may he by the still slower, but none the less sure, method of wilfully ignoring the physical laws of his life. As food is the foundation of all life, man must not undermine that foundation by his foolish commercial practices unless he wilfully desires the whole structure to topple over upon him and crush out his life.

WHAT ARE SOME OF THE KNOWABLE
SIGNS BY WHICH MAN MAY BE CON-
VINCED THAT THE FOOD UPON

WHICH HIS LIFE IS SUSTAINED PERFORMS CERTAIN FIXED FUNCTIONS IN HIS LIFE-PROCESSES, ANY INTERFERENCE WITH WHICH IS FOLLOWED BY DISASTER?

Medical science knows no drug which will cure anemia or the emaciation due to a disturbance of the digestive processes, constipation, diarrhoea, Bright's disease, cancer, nervous diseases and tuberculosis. Medical science knows that violation of nature's laws is responsible for these morbid conditions and that the only preventive of them is orderly obedience to those laws.

In the Philippine Islands they have a disease known as beri-beri. We have similar diseases in the United States but we call them during their various stages, inanition, anemia, neurasthenia, nervous prostration, paralysis, death.

Beri-beri journeys quickly from one stage to another through all these phases. Those who get it die the death.

In the year 1910 Dr. V. G. Heiser, then Director of Health of the Philippine Islands, Dr. Fraser of Singapore, Dr. Aaron of the Philippine Medical School, Dr. Highet of Siam and Dr. DeHaan of Java produced evidence to show that beri-beri is caused by a diet of polished rice—denatured, demineralized rice. This rice, which is the kind consumed exclusively in the United States, is brushed and scoured between wire bristles and grinding stones which remove the outer layer of the grain in which nature has gathered the phosphorized fats, phosphorized albumens and other mineral constituents

and ferments of the grain, thereby robbing it, just as refined white flour is robbed of the natural vitalizing elements which the body demands.

During January and February 1910 there was a severe outbreak of beri-beri among the inmates of the Cullion Leper Colony which resisted all medical treatment.

About the time of this outbreak some experiments were being conducted on chickens, some of which were fed on polished or denatured rice and some on the natural grain containing all the mineral elements which nature put there.

The birds fed on polished rice died. The others thrived. As the results of this experiment seemed significant, all polished rice was at once withdrawn from the diet of the lepers and the natural brown grain substituted in its stead. The sick in the hospital were fed the rice "polishings," the parts which are removed in making the rice white, representing the phosphorus compounds and other mineral salts, ferments and nitrogenous products of the grains.

The spread of the disease was promptly arrested and complete cures followed.

After this fact had been demonstrated to the satisfaction of the physicians, it was again confirmed by feeding polished and unpolished rice to two groups of railway workers in the Straits Settlements.

The group of men who ate the denatured rice contracted beri-beri in approximately sixty days, and when changed to a diet of the natural grain promptly recovered. The group which partook of the natural grain remained immune to the disease.

After a period of sixty days the denatured rice was substituted for the natural grain, whereupon the second group after about two months' diet on the debased product developed beri-beri just as the members of the first group had done.

When the facts were put before the Governor-General of the Islands he issued an executive order, June 3, 1910, forbidding the use of polished rice (demineralized rice) in all government workshops, prisons, hospitals and other public institutions.

On May 23, 1912, Dr. J. Tsuzuki announced the treatment of beri-beri in Japan by the administration of a solution of antiberiberin, which was produced from the alcoholic extract of rice bran. The daily treatment consisted of "one injection antiberiberin; six to ten antiberiberin powders; thirty to forty-five antiberiberin pills; three to five antiberiberin capsules and eight to twenty-five grammes rice bran powder." This quantity is equivalent to from one to three ounces of solid and concentrated mineral food.

Sixty-two beri-beri patients were treated under this schedule, of whom forty-two recovered entirely, the average treatment lasting twenty-three days.

This treatment consisted of restoring to the mineral-starved bodies of the sick just those vitalizing mineral elements which had been withdrawn from their diet by polishing their rice, thereby removing from that rice those essential but frequently despised elements which the Creator put there. Those who see the evil consequences of debasing rice by the whitening process to satisfy the demand for pleasing color, can judge what results follow the debas-

ing or refining of wheat by a process that robs it of the same organic compounds of phosphorus, iron, etc., in the same way.

APART FROM THE FACTS CITED ABOVE DO PHYSIOLOGISTS RECOGNIZE THAT THE ORGANIC COMPOUNDS OF PHOSPHORUS ARE ABSOLUTELY NECESSARY TO THE HEALTH AND WELL-BEING OF MAN?

Yes. Recognizing that man does not possess the power of the plant to manufacture its needed organic compounds of phosphorus from inorganic or non-living, phosphorus, Dr. Alexander Bryce of Birmingham, England, goes so far as to declare that "it is even probable that a daily supply of the different compounds of organic phosphorus is necessary in the food, as no proof exists to show that nucleins, lecithins, phosphatides or phytins are capable of being substituted one for the other."

To remove more than seventy-five per cent of all the organic phosphorus compounds of our grains before baking our millions of loaves of white bread, our millions of pounds of rolls, cakes, crackers, biscuits, doughnuts, etc., is to set aside all considerations of health and vitality, and all regard for nature's laws, in the idle pursuit of a pernicious custom which is slowly but surely making us a nation of physical bankrupts.

We know that beri-beri owes its origin to a deficiency of the organic compounds of phosphorus and the other mineral salts among rice-eating people, and that rice-eating people not only do not contract the disease when they live on rice as nature

produces it, but that even when they have developed the disease by eating "refined" rice they can recover their health by going back to the natural rice grain.

In America we are not a rice-eating people but we are a bread-eating people and a denatured grain-eating people, and while beri-beri is not a disease common to this country, due to the fact that our diet is not composed exclusively of rice or bread, yet in America polished rice and refined wheat flour are used very extensively by many classes, particularly the poor and the children of the poor.

The average well-fed business man, whose diet is generously varied, will probably obtain from the variety of his food sufficient of the elements necessary to sustain life in a more or less normal condition. But for the school children we have another story to tell. Then later, the hastily prepared luncheon, the denatured foundation of most hotel and restaurant meals, and the unfitness of the commercial baker's products continue the degenerative work that commenced with infancy.

In addition we also debase, in like fashion, barley in pearling it and corn meal in degerminating it.

ARE OUR CHILDREN SUFFERING TO ANY CONSIDERABLE DEGREE FROM SUCH VIOLATIONS OF NATURE'S LAWS?

We have seen that in the year 1910, 235,262 children under 10 years of age died in the United States. These figures were prepared by the Census Director of Mortality Statistics at Washington, D. C. In the year 1912, Dr. Thomas D. Wood of the Teachers' College, in a bulletin issued by the

United States Bureau of Education commented upon the physical defects of school children.

Dr. Wood stated that in the United States today 400,000 of the school children have organic heart disease.

1,000,000 have tuberculosis in some form.

1,000,000 have spinal curvature.

1,000,000 have defective hearing.

5,000,000 are suffering from mal-nutrition.

6,000,000 have enlarged tonsils, adenoids or enlarged cervical glands.

10,000,000, or as high as 98% in some schools, have defective teeth.

15,000,000 need attention for physical defects which are prejudicial to health and which are partially or completely remediable.

IN BROODING OVER THE ABOVE FIGURES SHOULD WE CONSIDER REFORM MOVEMENTS OTHER THAN THE "MAINTENANCE OF SANITARY, HEALTHFUL SCHOOL ENVIRONMENT, WITH CLEAN SCHOOL HOUSES, ABUNDANT LIGHT AND GOOD AIR;" "RATIONAL SUPERVISION AND DIRECTION OF PLAY, GAMES, ATHLETICS AND ALL HEALTHFUL AND SATISFYING FORMS OF PHYSICAL EDUCATION;" "HYGIENIC INSTRUCTION AND SCHOOL MANAGEMENT, WITH PARTICULAR ATTENTION TO INFLUENCE OF TEACHER UPON NERVOUS HEALTH OF PUPILS?"

The first part of this question is answered by

showing that proper nutrition demands the correction of the food-supply, and to answer the second question we must ask two other questions:
WHAT IS NERVOUS HEALTH? WHAT IS NERVOUS DISEASE?

If we assert that a certain disease is "nervous" do we mean that the nerves are diseased and therefore are influencing the body to a state of ill health or that a sick body has so affected the nerves that the latter react upon the disordered body?

The physician who administers "nervines" administers agents of unknown constitution to patients whose constitution is likewise unknown. He treats the nerves, but the nerves have been affected by wrong food or drink, or by unnecessary drugs, and it is the whole physical system that needs treatment.

It is true in a sense that all activity of the body is controlled by the nervous system, and therefore there is some foundation for ascribing disease to the failure of the nervous system. But why does the nervous system fail? Nervous diseases are on the increase and apart from the influence of coffee, tea, tobacco, morphine, cocaine, alcohol, syphilis, etc., what causes that increase?

An excitable person with faulty digestion is said to suffer from nervous dyspepsia and the nerves are blamed for the dyspepsia and treated accordingly. Are the nerves acting abnormally because of the dyspepsia or is the dyspepsia acting on the nerves? Which is the offender?

The nerves, like all other living tissues, are subject to the laws of nutrition. They have to be fed,

repaired, kept in trim. The vascular channels carry their nourishing elements to the nerves and the blood of the body is the medium from which the nerves and tissues derive their nourishment. Blood is the end-product of digestion as we have seen. Now if the food is poor, does the heart possess some special discriminating function whereby it is able to choose for the nerves alone any good elements that the poor food happens to possess?

If the food does not contain the elements necessary to normal digestion how can digestion remain normal? How can abnormal digestion produce good end-products? How can the bad end-products of bad digestion produce good blood? How can bad blood impart proper nourishment to the nerves? How can badly nourished nerves preserve their vitality?

Nervous health is not an end-product of bad food and nervous disease is not an end-product of good food. The public schools must initiate food reform if they are to have anything to say concerning the influence of the teacher upon the nervous health of the pupil.

Schaumann has shown that polished rice which produces tropical beri-beri, or even the ship variety of beri-beri which arises in the European crews of sailing vessels forced to live on food largely deprived of its organic phosphorus, will also produce polyneuritis in fowls. Schaumann proved that barley and white flour can induce the same disease. The writer can prove that ordinary corn meal (degerminated behind the screens) can bring about the same results.

Schaumann also showed that by demineralizing foodstuffs of any kind through the action of solvents or by disorganizing those organic mineral substances by high temperature the same disease can be induced. It has also been shown that foods rich in the organic compounds of phosphorus such as peas, beans, wheat bran and middlings, barley-polishings, rice-polishings, grain germs, etc., when added to the demineralized or defective foodstuffs will prevent the development of the disease or can cure it when present.

Beri-beri is the extreme or last stage of mineral starvation.

APART FROM THE UNOFFICIAL EXPERIMENTS OF INDIVIDUALS AND THE OBSERVATIONS OF MEN INTERESTED IN DIET-REFORM, HAVE ANY OFFICIAL OR NOTEWORTHY EXPERIMENTS ALONG THESE LINES BEEN RECORDED IN RECENT YEARS IN ENGLAND OR AMERICA?

Yes. The following are some of the details of the research work carried on during the years 1911 and 1912 with whole wheat and refined white bread in the Bio-Chemical Department of the Liverpool School of Tropical Medicine by Professor Benjamin Moore and his aids:

“Groups of pigeons have been fed on fine white bread made from white flour guaranteed to be unbleached and unadulterated, while similar groups of pigeons have been given an ordinary quality of whole wheat bread. The white-bread pigeons all speedily developed marked symptoms

of ill-nutrition and serious nerve derangement. Besides losing weight they sat listless and shivering, lost power in their legs, suggesting nerve paralysis and many developed convulsions.

"The whole wheat pigeons, on the other hand, kept healthy and up to normal weight.

"In another series of experiments, pigeons which had developed grave nervous symptoms on a white bread diet recovered completely, when after a week of special nursing they were placed on an exclusive whole wheat bread diet during their convalescence.

"All the recent work done in our bio-chemical laboratories proves beyond question that in all cereals, such as wheat, barley, oats and rice, there are important substances incorporated in the inner layer of the husk which are essential to the nutritive value of the grain. If these elements are eliminated in the milling or preparation of the grain, a diet largely composed of cereals or bread thus denatured (corn-flakes, breakfast-foods, farina, biscuits, soda-crackers, cakes, etc.), will not only fail adequately to nourish the body but will tend to set up actual disease by lowering resistance to a point where disease-breeding bacteria can gain control.

"Our nerves as a nation are much less stable than in the days prior to a white bread diet. All our work suggests that the growing tendency of the age to neurasthenia, 'nerves,' is not unlikely due to removing from our diet those very elements of cereal foods which nature has hid in the

husk of the grain and which man in his ignorance discards.

"Certain of the diseases of mal-nutrition among children, notably rickets, scurvy-rickets, tetanus and convulsions, present symptoms very similar to those we note in our white-bread pigeons. So striking is this similarity that physicians who have followed up our work are already treating certain of their scurvy-ricket patients with a diet of whole wheat bread."

Dr. Frederick Gowland Hopkins, University of Cambridge, conducted a series of experiments along the same lines and, after definitely proving that young animals grow with very much greater rapidity on whole wheat flour than on white flour, was able to improve the tissue-building rate of the white-flour subjects by adding to their white flour an extract made from the brown flour, thereby ascertaining that to make the best use of any food material, such as the proteins, etc., a variety of the organic mineral compounds must be present in definite proportions. His experiments were peculiarly like those which we have noted with regard to antiberiberin extract made from rice bran.

Doctor E. S. Eddie and Dr. G. C. Simpson, of the research staff, University of Liverpool, reporting on similar experiments, declared:

"It has been proved by Braddon and other workers in the East that exclusive use of polished rice as a diet leads to a form of peripheral neuritis. This disease does not occur in those native races who use whole rice as a diet. Our own experiments have been extended to similar work in

relation to the stripping of the outer case from the wheat berry so as to produce a white bread instead of a whole wheat or standard loaf, and we find that parallel results are often obtained when the outer layers are excluded from the diet with both wheat and rice. These experiments clearly demonstrate that the outer part of the grain contains the essential constituents for the nutrition of the nervous system, both in growing animals and in adults."

HOW CAN TEACHERS INFLUENCE THE NERVOUS HEALTH OF THEIR PUPILS IF THOSE PUPILS COME TO SCHOOL ON A DENATURED BREAKFAST AND GO HOME TO A DENATURED DINNER?

Not so much by moral processes as by the physical means of teaching them how to correct their diet in conformity with the laws of nature, disobedience to which is really immoral.

BUT WHEN WE CONSIDER THE FACT THAT WE EAT A GREAT MANY STEAKS AND CHOPS, DO WE NOT SUPPLY IN THESE FLESH FOODS THOSE ELEMENTS WHICH THE CEREAL MANUFACTURER AND BREAD MAKER TAKE FROM US, THEREBY BALANCING OUR DIET?

The direct answer to this question is, No. But there are many indirect answers.

If you adopted the habits of meat-eating animals, lions, tigers, vultures, etc., and ate the blood of the animal as well as its bones and flesh, you would find all the elements of life which the flesh and blood

and bones contain, all the phosphates and oxides, all the calcium and iron, all the nitrates and sulphates of the animal's organism; but when you kill your meat-producing animals, you hang them up and drain them of their blood and strip them of their bones, saving nothing but the flesh with its minimum content of phosphorus and potassium. It is easy to bring about a condition in young dogs, resembling "rickets" in children, by feeding them on meat and fat alone. If you add pulverized bone or calcium carbonate or calcium acetate to their meat and fat, the animals partially recover.

Flesh which is minced and immersed for a few hours in cold, distilled water loses its phosphorus and potassium salts and its color. If cooked in this condition it will be tasteless. If offered to dogs and cats they will eat a little then refuse to take more until driven to do so by hunger. If fed on nothing else they will die quicker than animals not fed at all, for, in addition to being deprived of substances that will sustain life, the animals fed on demineralized meat are obliged to dissipate their reserve vitality at a rapid rate through the effort of their organs to throw off the useless food imposed upon them, whereas the animal that is being starved outright does not expend its strength faster than the laws of starvation demand.

WOULD NOT THIS TEND TO REDUCE
THE CONSUMPTION OF MEAT?

We must not lose sight of the fact that America has introduced meat-eating to the world on a larger scale than was ever known before. The early settlers found meat absolutely free in America. All

they had to do was to go to the woods and shoot. Bison, bear, moose, squirrel, rabbit, deer, grouse, quail, duck, turkey were to be found in every clump of trees. In the old country men had so little meat that they sang songs of ecstasy when at Christmas time a boar's head or a roast joint was brought to the table. Meat in America everywhere and at every meal, easy to obtain, easy to prepare—no wonder the meat habit became fixed when the meat-hungry European became a companion of the wild animals of the American mountain and plain.

A deer was shot; its loin was frizzled over a wood fire and the remainder of the carcass was left to rot. Men were not worried over the food question. Food was free. But settlers came in greater numbers and as they grew thicker wild meat grew scarcer. Men were building cities, framing a constitution, planning for a money supply, but no one thought of the food question. Food was still comparatively free, even though it did not stalk up to the front of the settler's hut to be shot as in the earlier days. Grazing lands were transformed into agricultural tracts. Where cattle once fed, onions, tobacco, cotton and corn were planted. Towns and farms grew in number, not so the crop of cattle. The product of the corn fields was gradually turned into glucose, whiskey, corn starch, cattle food and breakfast-food—but the breakfast-food contained only part of the corn, the least valuable part. The steer ate the cream of the grain—and man drank the alcohol, ate the corn syrup, the corn flakes and the fattened steaks. The crowds continued to come and to-day there are a million more mouths to feed than there were six

months ago, but there is not more meat to eat and the robbery of the wheat and rice and corn goes on. Let us not forget that when America began meat was free, but the day is near at hand when meat once a week will be the rule, and after that it is inevitable, with our increasing millions, that cheap meat will be a memory and meat-at-all a luxury.

Our children of to-day, as the men of to-morrow, should learn the truth, and learn the way of escape from starvation, and the high cost of living.

The American workman will come to the condition of the common people of Europe who ate meat only at Christmas time. If the government does not plan to give him a plentiful supply of honest food free from the abuses and debasements of our avaricious commercialism of to-day, we will have the same scourge of famine and disease with which the older peoples of the world are cursed. No, meat does not balance a denatured diet and it never will! Even so, it is better as it is and will be better still when meat is only a name, if we face the issue and reform the food we have. Already the children of America are paying the price of their fathers' ignorance and indifference. Already the processes of degeneracy are at work in a land of supposed plenty!

Despite the establishment of this fact, tremendous and terrible in its significance, we carelessly destroy the organic mineral compounds for which physician and surgeon even at the uttermost extremity of death can find no adequate substitute in nature. Science has penetrated into the secrets of nature, she has multiplied man's power by arms of iron and

nerves of steel, she has won conquest for him over the seas and the air, but she has not taught him obedience to nature's laws nor has she shown the plain people how to eat their daily bread.

Springtime is the season of high spirits in nature. Man alone in the spring complains of lassitude. All round him he witnesses the miracle of rising sap, the quickening strength that swells the bud, the energy that forces the spear of grass up through the hard clod. Man needs his "tonic," or thinks he does, because unlike nature he does not heed the laws of life but sets up standards of his own. Unhappily his standards are at war with heaven and so he pays the price in death.

IS THE DEVITALIZING OF OUR GRAINS THE ONLY FOOD-CAUSE OF THE PHYS- ICAL DEFECTS OF 15,000,000 OF OUR AMERICAN SCHOOL-CHILDREN?

No, although it is the biggest single factor in the degeneracy of this nation, it is not alone. The sugar-bowl and the candy-kitchen loom large in the background. Their insidious work is baffling the skill of our physicians and surgeons to a degree which we cannot understand until we have asked the question, what is sugar as it is manufactured today?

The answer to that question stumbles over another broken law of nature and still another, and again we see man in his commercial skill defiant of the ruin which his greed is piling up around him.

The sugar cane is a good gift of nature and its unrefined product, cane-sugar, is a valuable and a natural food just as unrefined honey and unrefined

maple sugar are valuable natural foods. But man spurns the juice of the sugar cane and will have none of its fine-flavored, rich brown crystals containing the beneficent tissue salts which the plant has elaborated for his benefit. In the case of the maple tree he is inconsistently content to consume its nut-brown sugar just as it leaves the kettle whereas he asks that the sugar of the cane be demineralized and refined until its color is reduced to an artificial pallor.

We will examine the conduct of that mineral-hungry sugar a little later. Its companion, molasses, bleached and preserved with sulphurous acid, every barrel of it as manufactured in the United States, has a slightly different charge to meet, but its first cousin, glucose, is included in the same indictment. Millions of pounds of life-giving corn are destroyed and consumed annually in the manufacture of syrup which is simply an artificial, mineral-free conversion of the starch of the corn by the hydrolizing action of muriatic or hydrochloric acid into the sweet, with which our children spread their minerally-robbed bread, and which the candy maker employs by hundreds of thousands of barrels in the preparation of his thousands of tons of mineral-free bonbons, chocolates, caramels, sticks, balls, beans, pellets, etc.

WHAT DO YOU MEAN BY SAYING THAT REFINED CANE SUGAR AND GLUCOSE ARE MINERAL-FREE?

The chemical processes by which they are manufactured destroy or remove the organic mineral compounds organized for man's needs by nature in

the sugar cane and in the grain of corn. Man by laying his ruthless hands upon those natural products defeats the ends of nature and produces instead an artificial shadow of the substance, foolishly believing that by so doing he is contributing to the welfare of his fellows.

WHAT DO YOU MEAN BY SAYING THAT REFINED CANE SUGAR AND GLUCOSE SYRUP ARE MINERAL-HUNGRY?

The answer to this question is most serious. If we kill a frog and place its pulsating heart on a slab of marble the frog's heart will continue to beat for some time. It will of course eventually collapse and become flabby and lifeless. In order to prolong its pulsations for an hour or more we need only provide it with a solution of lime (calcium), (KCl or NaCl of proper strength produces the same effect), one of the sixteen simple elements of which we are composed. Under the mysterious influence of this commonest of earths the cold marble slab will witness in that dead heart for hours the manifestations of life.

BUT WHAT HAS LIME TO DO WITH DENATURED SUGAR?

Without the assistance of lime the digestive ferments refuse to perform their complex functions.

Rennet is a ferment. It is employed in making curd from milk, the first step in making ordinary cheese. In order to help the rennet do its work, the lime in the milk must be made soluble and kept soluble and, in order to accomplish this, the cheese maker employs hydrochloric acid or some similar solvent of calcium.

If the lime were not present in a soluble form the curd would never become cheese. This is proved by adding a little oxalic acid to the milk or by decomposing or precipitating the lime by boiling.

The oxalic acid throws the lime out of solution thereby depriving the rennet of its aid, thereby inhibiting the processes of fermentation, thereby preventing the making of the cheese. Lime is a mysterious worker but an active one.

If you cut your finger the blood coagulates at the wound and you do not bleed to death, because of the activity of the soluble lime that is present in the blood. It is not difficult to understand that we should permit no condition of nutrition which has the power to interfere with the presence of our blood's normal content of lime. We are getting nearer to the answer to the question, What is mineral-hungry sugar?

Let us look at the records that tell us of 10,000,000 school children with defective teeth. Those defective teeth are only the surface symptoms of much deeper ravages. The dentist prescribes tooth washes and tooth pastes, advocates oral hygiene, fills cavities and fits bridges, ignoring the fact that the great cause of tooth destruction is to be found on the one hand in lime and phosphorus starvation and on the other in food (mineral-hungry sugar) that has the power to steal lime from the body!

Some dentists say that this candy and sugar-eating nation loses its teeth because the excess sugar that it takes into its mouth acts directly and destroyingly on the surface enamel. They close their eyes to the fact that destruction starts in the

pulp of the teeth, beneath the crust of enamel. The vital processes of the body cannot carry on their work without lime. Where there is a deficiency of lime salts in the food the body actually tears down its own structure in order to obtain this necessary mineral. It burrows into the only available source of lime supply, the lime of the teeth and bones. In the teeth this lime is gradually consumed until it leaves only a shell-like arch over the weakened spot. Here the enamel sooner or later cracks and crumbles under pressure and an avenue is opened up for the entrance of bacteria from without to complete the ruin. The damage had been done before there was any surface evidence of it.

Sugar and fruit acids have no effect on sound teeth. Such teeth can be immersed in solutions of fruit acids and sugars for months and suffer no erosion.

Sugar (mineral-free and mineral-hungry) has a remarkable affinity for lime, just as much as iron has for oxygen.

When we consume an excess of lime-free sugar, the sugar with insatiable thirst attacks the soluble lime of the tissues and blood and uniting with it carries it off. The blood and tissues retaliate by sapping the bones and teeth, for in order to live and work they must have lime. The druggist appreciates the remarkable affinity between sugar and lime and makes use of it in preparing his simple syrup of lime. One thousand parts of distilled (mineral-hungry) water will take up one part of lime. The addition of sugar to the water increases its lime drinking capacity 3,500 per cent.

The babe in its mother's womb is a lime consumer. If the mother's food is robbed of the lime that belongs to it, and if she is a sugar consumer, both mother and babe pay the price but the mother pays it first. The wounds of a sugar consumer bleed profusely and heal with difficulty. Profuse bleeding is characteristic of tissues fed by blood deficient in soluble lime.

If we are indifferent to the physical rights of motherhood and childhood, if we care nothing for her whose instrumentality in carrying on the work of God's creation is divinely appointed, if we are more deeply interested in the unnatural titillations of the palate and the artificial demands of the eye for pale color, then let us go on in our commercial crimes of robbing the grains and refining the sugars, and demineralizing both. The demineralized sugar has just as much affinity for iron as it has for lime and the candy eater, as candy is now made, robs his body of its iron in the same way.

The candy-maker dare not cook sugar in an iron kettle because the sugar will actually unite with the iron and carry it off, thereby destroying the kettle. We ignore its destructive action on the body but save the pots and pans. Sugar and glucose differ in this: sugar does not kill bees or mice; glucose does. Glucose is not consumed as a sweet, it has to be sweetened with sugar or Sachaarin. It is used as a filler because it is cheap. The mineral salts taken from the corn in making glucose are taken from man and given to cattle, because cattle fed on the by-products of the glucose industry, die if the mineral salts are not mixed with that by-product.

CAN WE TEACH THESE THINGS TO CHILDREN IN THE SCHOOLS?

Yes, we can feed chickens on a lime-free diet and note the results. We can feed dogs on meat, without bones, and note their tettered skin, their loss of hair, their ugly disposition, their shortness of life. We can feed caged mice on refined corn meal, or white bread, or polished rice, and distilled water (lime-free) and note their "nerves," then their paroxysms, then their convulsions. We can study the culture of pneumonia germs which reaching a stationary growth are revived with lime. We can study the twitching of the muscle that is deprived of lime and we can remember that lime is only one of the organized minerals without all of which in proper proportion life and health are failures.

The coal-tar color schemes and the ethers commonly employed in candy-making, soda water, soft drinks and commercial baking, butyric ether, oenanthic ether, formic ether, benzoic ether, valerianate ether, amyl ether, ethyl ether, acetic ether, etc., with the anti-ferments or ferment-destroyers employed in the making of condiments, sauces, jellies, jams, mince-meats, beverages, etc., are not substitutes for the life-making, life-sustaining, natural food elements which modern food-folly removes from our national food supply, even though the commercial food factory employs experts to declare them "harmless." Food should be a human conserver not a human destroyer.

ARE SWEETS THEN ESSENTIALLY INJURIOUS TO THE HEALTH OF THE HUMAN FAMILY?

By no means. They are on the contrary quite necessary to the human family and are found in all nature in a natural state.

Most vegetables are rich in natural sugar or in sugar forming elements which by the action of the digestive organs are converted into sugar. The child should not be fed with artificial sugar for the reason that it makes its own natural sugar. All the starch consumed by a human being must be changed into sugar before digestion can be completed.

DOES THIS MEAN THAT THE ONLY SUGAR WE SHOULD CONSUME IS THE SUGAR FOUND IN FRUITS AND VEGETABLES SUCH AS THE GRAPE, PEAR, PEACH, DATE, FIG, BEET, CARROT, ETC.?

No, it means nothing of the kind.

From the earliest recorded period of man's existence on this planet he has been a consumer of added natural sugar just as he has been a consumer of added water. His vegetables and fruits contain the quantity of water which they should contain but according to the variation of his conduct, exercise or habits his need for more water increases. In somewhat similar manner added natural sugar becomes valuable to his diet. The patriarch Jacob sent a present of honey to propitiate the dreaded prime minister of Egypt of whom he would buy wheat. The Greeks made bread and cakes with flour and honey. Pythagoras who died at the age of 90 lived on bread and honey and recommended such diet to his disciples. Besides the honey of the bees, the production and culture of which should be en-

couraged on a vast national scale, the ancients recognized "reed-honey" or cane sugar. Theophrastus spoke of it as such and Dioscorides called it "honey of reeds."

In the East Indies, Arabia and China the sugar cane, "a certain reed filled with a kind of honey," was cultivated for centuries before the dawn of the Christian era. It was not until the 15th century that any attempt was made to "refine" "the honey of reeds," when a Venetian discovered a method of whitening the brown syrup and reducing it to loaf form. Honey, the unrefined honey of reeds or cane syrup, the unrefined sugar of the cane, and the syrup and sugar of the maple tree are natural sweets, affording for preserving purposes, baking, candy-making and all other culinary purposes, a trinity of flavors which modern civilization has almost forgotten, flavors so superior to the flavor of the denatured granulated sugar of the grocery store that they might be called the lost sweets of paradise.

**ALL THIS REALLY ADVOCATES THE USE
OF IMPURE SUGAR, DOES IT NOT?**

If sugar, containing the salts of the cane that nature put into the juice of the cane, can be called impure (?) sugar it advocates that kind of sugar.

Starch in nature is always combined or associated with other elements. Sugar, too, in roots, fruits, reeds, trees, is combined in the same way with other elements.

This is as it should be and we should allow no man to take anything out of our foods that nature put there.

Chemically pure sugar, $C_{12} H_{22} O_{11}$, is a product of the laboratory, not of God.

If you have never had a hint of the delicacy of these things beat two eggs, add them to a quart of certified milk, add to this mixture a half pint of strained honey or the same quantity of pure sap-syrup from the maple tree and freeze as you would freeze ice-cream. A cake can be mixed with whole wheat meal, eggs, butter, honey or pure maple syrup, sufficient water or milk to make a batter, with cream of tartar and bi-carbonate of soda for raising, which will start you on a career of restoring to the diet of your household the flour and sugar mixtures as they ought to be and as nature asks you to have them. You cannot procure old-fashioned pure brown sugar now-a-days but when enlightened people decide in sufficient numbers to want it, the perverted cane sugar industry of modern times will return to you the inheritance which you have surrendered in exchange for the pallor of death in your sugar-bowl. Old-fashioned open kettle molasses, now a thing of the past, must be restored. It was an honest food, rich in the tissue salts of the cane and possessing a most delicious flavor. The miserable molasses of to-day, treated with DEADLY sulphurous acid, must be destroyed. Our children demand its destruction and the only thing that stands between them and their rights is the old stock argument of every evil industry, "Menace us and you throw hundreds of men out of work."

Why keep men at work when the fruits of their toil degenerate their children? Sulphurous acid must go. It plays a bad role in the tragedy of food

frauds, acting as an agent that prevents oxidization in fruits and sugars, thereby bleaching them to a lighter color. It retards oxidization in the body in the same manner and destroys the blood corpuscles in its evil work.

WHAT THEN IS THE PURPOSE OF THIS SERIES OF QUESTIONS AND ANSWERS?

The reform of man's food by conserving the solubles of that food, by conserving its ferments and its organic compounds.

HOW IS THIS REFORM TO BE BROUGHT ABOUT?

By a vast scheme of education which will teach the rising generation the meaning of food in its relationship to life, beginning with the most commonplace of all foods, the cereals and sugars, until the dangers of denaturing, chemically preserving, chemically bleaching and chemically coloring foods are fully understood.

Nature gives man an appetite.

Nature supplies food for that appetite.

Man by artifice and caprice wantonly changes the character of nature's food, thereby establishing conditions hostile to nature's processes.

These unnatural conditions bring about misery, disease and untimely death. Tuberculosis follows low resistance; let that be remembered. To prevent the unnecessary sorrow and pain that follow man's sins against nature in relation to eating and drinking, our national food supply must be reformed.

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